

ORGANIZATION OF NATIONAL FOREST FORCE

Paper by Chas. H. Flory, Assistant District Forester
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Ex-President Roosevelt, in a certain address, once said: "I believe that the Foresters of the United States will create a more efficient system of Forestry than we have yet seen." This is a pretty bold prophecy to make considering the perfection already attained in the art of Forestry, but it typifies American aggressiveness to do and accomplish things better than the other fellow. If there is anything in energy, enthusiasm and imagination we stand to win for we have the resources, the economic conditions and the public sentiment to back the men who are going to do it. So far as the real management of our Federal Forests today is concerned they are in many respects no further advanced and in many ways farther behind those of Europe just after the close of the feudal system. This may seem rather an iconoclastic statement for me to make but it is none the less true as I hope to show in a very brief way.

In Europe by the beginning of the 18th century a definite Forest policy had taken tangible form; waste in logging was discouraged; taxes were adjusted; forest schools were established; quite a literature on the subject had sprung up. Many of their state ordinances, all their forest writings, in fact, much literary thought of the times were given to the all-absorbing question of a future wood supply. In those days there was no transportation and forest products could not be brought in from a distance so well might the burgher, freemen and serfs look with alarm upon the dwindling of the supply in their local communities. But people were becoming better educated and civilized; economic conditions were changing rapidly. The cause which lead to an increased development of industrial life also were instrumental in fostering the progress of forest destruction. To show how extreme their views in a certain direction became for the public welfare because of the scarcity of wood – in a certain town the bakers were prohibited from baking bread for any but the residents of that town. To prevent overcharges the Jews were excluded from the wood trade. To enforce extension, before a man could even get married he had to prove to the proper authorities that he had planted a certain number of trees.

Comparatively speaking we are merely in an embryonic stage when we consider the rigid scientific developments of Forestry with our German, Austrian and French contemporaries. Very true, many of us are quick to say; economic conditions are widely different from those of Europe and other countries. Our country is not so thickly settled, we have well developed transportation, there is not the local demand for the forest products, therefore, we do not need to concern ourselves now in applying practical methods of Forestry. That when need arises in the dim, distant future, it will be time enough to consider the applicability of foreign Forestry or at least modified methods. But let us look closer and see if our assumption is correct. It is common truth that

history repeats itself. It is none the less true in the history of Forestry. In fact, the different stages in the progress of Forestry in the United States and the problems presenting themselves for solution are almost identical to those which the Germans and Austrians have been forced to meet. For the purpose of comparison I will confine my remarks to these two countries.

Originally the forests belonged to no one in particular but were held as common property. Gradually with the development of the feudal system they became attached to the great estates of the Barons, Dukes, and noblemen. Their management was merely a police function in connection with the chase. No one thought of the forests as anything but a place affording shelter or mast for wild and domestic animals. It was the duty of the Forest Guards, who were usually ignorant lackeys, to prevent poaching or trespass. They received practically no pay for their services, were incompetent, and because of their poverty were forced to thievery and extortion. The chief functionary who had charge of the guards and issued instructions to them when the hunts took place might be called the Master of the Chase. He was usually a man of large woods' experience, knew the habits of wild animals and was endowed with considerable intelligence. Here we find the first rudiments of an organization of men for the protection of forests, although there was practically no differentiation between the management of woodland and the protection of game.

Gradually through changing economic conditions the old feudal system dissolved and the forests became the property of the state, town, church or private individual. The exploitation of forest products began rapidly and through devastation by fire and ruthlessness in cutting the diminishing forests were beginning to be viewed with alarm by the more farseeing people. By the middle of the 18th century much woodlore had been gathered together in the literature of the time and some technical detail had developed. About 1750 the recognition of the importance of forestry led to a separation of the hunting and forest interests, and the latter were placed under the direction of a State Forester. But it was not until after 1815 that the modern scheme of administration by forest units under a well systematized organization of trained Foresters and Guards (or Jaeger) came into practice.

About this time, because of the greatly increased cost of wood and forest products, continued exploitation and a thoroughly roused public opinion, a careful inventory of stock on hand was made, extensive silvicultural studies were conducted and improved mensuration methods devised. Working plans were made for extensive regions and the forests placed on the practical basis of a sustained annual yield. The administration of large areas of forest was perfected by reducing the areas under control to districts of 100,000 to 125,000 acres each, and managed under a working plan by an Ober Forester assisted by several under-foresters and guards, (Jaeger).

The most interesting facts brought out in a most cursory study of German forestry and on which I want to lay special emphasis is that all this elaborate preparation and application of practical forestry methods was for the purpose of preventing a timber famine which, taking Germany and Austria as a whole, really at the then rate of

exploitation was a century in the future, although it had already arrived in individual communities.

It must not be inferred that this healthy condition of the forestry movement abroad had an open sea to travel upon during its slow but steady earlier movement from the 14th to 18th and its more general adoption during the 19th century. It met with obstacles on every turn, and a strong perverted public opinion from certain quarters, similar to that typified in several daily newspapers at present in the United States, sought at all time to thwart and overthrow the work already done. The whole story of forestry is so exemplified in other countries, especially Germany and Austria, that its interpretation has a decidedly important bearing on the building up and perfecting of methods of administration and organization of our Forest force here in the United States.

I do not pretend that foreign systems of administration or organization are applicable to our needs or that we apply any of their more involved and scientific methods in the management of our National Forests, but I do say emphatically that the lessons learned there teach us the necessity for a well organized and efficient personnel.

Before going into detail on the subject of needs of a better organization and its form I wish to dwell for a few moments on the growth of the forestry movement in the United States in order to make clear my statements later on.

The first real beginning of the forestry or conservation movement was in 1870 when the United States Census attempted an inventory of our Forests. Before that there had been a few spasmodic attempts at local regulation from time to time, but none of them had borne fruit. The report of the above census resulted in 1873 of sending a Memorial to Congress by the American Association for the Advancement of Science, which pointed out the importance of preservation of the forests and recommended the appointment of a Forest Commission, Accordingly three years later an agency was established in the Department of Agriculture out of which grew the Division of Forestry whose principal function was the dissemination of information on forestry matters. For years the Division was hampered by lack of funds, but in spite of this the work of educating the public, by giving advice and issuing bulletins continued. Finally in 1891 an Act was passed by Congress authorizing the President to set aside unappropriated timber lands for reserves for future protection and use. Immediately an area of between one and two million acres was withdrawn by President Harrison as the Yellowstone Park Timber Reserve. From this small beginning 19 years ago the number and area of the Federal Forests has increased to 150 with a total of nearly 195,000,000 acres at present. The mere creation of reserves, however, accomplished little more than setting aside and preventing entry of vast areas of timber land except under the mining law. Originally Congress failed to fully grasp the idea that anything else beside the mere custody of land was involved. So their care was intrusted to the Land Office under the Department of the Interior. The Land Office not being equipped for determining their proper boundaries and making a canvass of their resources, this work was delegated to the Geological Survey. In some cases Supervisors and Rangers paid absolutely no attention to area intrusted to their charge, but went about their private business and

drew Government pay at the same time. Many of the men were woefully incompetent or lacked training along the lines involved in their duties. I believe it was one of the Supervisors present here who told me that while a Ranger under the old regime he worked two whole years without a word of instruction from anyone.

It was but natural that a storm of protest arose from the people under such absolute lack of system. Under such a situation it is not to be wondered that the public believed the Reserves tied up and prevented development of enormous areas in the Western States, a belief that is still with us and difficult to overcome. Both the Land Office and the Geological Survey were compelled to call upon the Bureau of Forestry continually for advice and direction in handling reserve problems with the final result that economy of money and effort demanded the merging of all the work, February 1, 1905, under the jurisdiction of the Department of Agriculture, and under the direct charge of the Bureau of Forestry which became then the Forest Service. The number of acres comprising the National Forests at the time was approximately 63,000,000. The Service at once found a tremendous task ahead of it with only a handful of trained men to direct affairs and establish order out of chaos. It had to deal with new conditions. Practically nothing was known of the Reserves from a Forestry standpoint. A complete reorganization was necessary in the central office as well as in the field.

It is really wonderful that so few mistakes were made and that a working organization at least able to handle the more urgent and immediate problem was established so quickly.

In brief then, in the period of 40 years the Forest movement has grown from its conception in 1870 to the full realization of the need of conservation today, and although slow in getting started it has now arrived, and as Mr. Pinchot said the other day while testifying before Congressional Investigation Committee, "It is the greatest movement now traversing the mind of the people."

Remembering the facts shown in the history of the experience of our contemporaries in other countries, I wish to sound a note of warning. I believe it is high time for us to pause a moment and analyze our present policies regarding the care and administration of the National Forests. It is the people's property. We are the custodians of, but it will be the next and future generations, not the immediate present who will call us strictly to account as to how well we have administered their heritage. I am not sure that all of us have full appreciation of what is needed or in what direction many of us are drifting. I believe a few have, however, read the answer correctly and have already begun to see the problem in a new light. It is upon a correct diagnosis of a case that the proper remedy is prescribed, and it will depend upon how accurately and with what breadth of vision a Forest officer grasps the situation that a correct solution can be found.

The Forest Service has been five years in devising and building up methods of administration and organization to handle the work of the National Forests, but they are still far from perfect. It is, of course, obvious that with the newness of many of the problems and the urgency with which many of them had to be met that constant

changes in organization has been the rule, and that many temporary makeshifts have resulted through expediency. It has not been a question of what to do next, but what to do first. One system may be tried for a short time, found inadequate and discarded. The central office in Washington and the recent District offices, of course, have undergone these changes more than individual Forests, but the net result has been more or less rapid, settling and shifting of the various lines of work to the Forests with consequent increased work and responsibility to the Supervisor and his subordinates.

Too much supervision has always been recognized as an evil, not only in Government administration but all private industry as well; it is therefore, a fundamental policy of the Service to transfer the responsibility of practically all the work done on the Forest to the local offices, just so fast as they are sufficiently trained and equipped to handle it. It is in this very act, however, that a serious danger lurks and which if not properly safeguarded against will result disastrously. It is already having its effect on some Forests as I will show later. As I said before, the greatest activity of the Service so far has been in handling and taking care of the routine and daily round of current business without giving much attention to practical forestry, which is really the primary reason for establishing the Forests by Congress. It has not been because those at the head of the Service have failed to measure up to their jobs or that they have forgotten and willfully neglected these important things, it is because the very nature of things demanded so much time and effort spent in building up schemes of organization to handle routine daily work. It is no wonder then that many Rangers and Supervisors have unconsciously and unintentionally been led to believe that the mere handling of routine work is the sole duty of Forest officers. I know that there are Field officers in this District that honestly believe that their chief duties in life are to simply make endless reports and answer letters in order to satisfy the curiosity of the man higher up. I will admit that there is oftentimes much needless work done which could be simplified but we are working as fast as experience will allow in reducing to a minimum all routine work in the field. Naturally there will always remain much work of a clerical and semi-clerical character on the Forests, and because of this many Supervisors have an unfortunate tendency to organize their force and train their men merely as so many custodians of lands with no thought of the real work at hand. I mean no criticism by this, because if the men at the head of administration have not found time to show the need of and insist upon the broader and fuller study of forest problems we can not altogether expect it from the man in the field. If he is trained to do nothing but clerical or special kinds of business he can not be expected to evolve and direct silvicultural studies, make working plans, and do all kinds of practical forest work. Still much depends upon the initiative, energy and ability of the individual Field officer. We now have the frame work of an organization from which we can eventually evolve the machinery for creating a more effective system of forestry.

I have already shown that the Germans proved their foresightedness by making careful studies of their problems, and evolved and put into practice intensive forestry methods a hundred years or so before the actual timber famine was imminent with the result that the famine never came and never will so long as forestry has a show. This fact spells much to the American Forester. It is common knowledge to all of us that at the present

rate of exploitation and consumption our total timber supply will be practically exhausted in 25 or 30 years. Does not this fact give us our cue? At the present rate of exploitation by lumberman, the timber in the National Forests in this District would last Oregon and Washington 60 years or the United States as a whole for eight years. But Oregon and Washington use only a very small per cent of the cut at home. The bulk of it goes to supply the market elsewhere. These are hard cold facts. Do they mean anything? It seems to me that they speak volumes in what we must do in order to help relieve the situation and meet the obligation imposed upon us by the people.

So far it has been the tendency on the part of some of the Field officers to detract from the importance of certain lines of work and lay undue stress upon others without realizing or appreciating relative values or the necessity of coordinating all branches into one broad general plan. On those Forests where grazing is an important feature we are very apt to devote all our time and men to its problem with never a thought of the needs of the Forests from a silvicultural or other standpoint. The result is that all the Rangers and the Supervisor on such Forests become specialists in that particular business and take little interest in handling any other. In other words, only a one-sided grazing organization is established and grazing's broader relations to other lines of work and Forestry is lost sight of. Again in a heavily timbered forest there may not be sufficient grazing to demand so much consideration but still enough to warrant careful attention but it suffers because there is too much time spent on other things. Some Supervisors devote all their time, money and men to building permanent improvements and yet perhaps not fully grasp the improvements' true relation to the fire problem. Most Supervisors, I believe, spend too much time and attention to office detail even when supplied with competent and efficient clerks and go into the field only occasionally. No doubt it is difficult to get away from the practice owing to the fact that clerks formerly were not employed and Supervisors did practically all the clerical work themselves. But as mentioned before there is a growing tendency to relegate all lines of important field business and get into the rut of stagnation by becoming merely supervisory clerks. This is absolutely wrong and I can not criticize its practice too strongly. Instead of allowing routine and clerical work to be our paramount duty with only indifference and desultory attention given to the needs of practical forestry the table should be turned and our best efforts and first consideration given to the real issue and let clerical work take a secondary place. A few Supervisors have already the full appreciation of this fact and have made a beginning in the right direction.

The Service is now supplying all Supervisors' offices with clerks who are qualified and proficient in stenography, typewriting, and bookkeeping or accounting methods. It is the policy usually to fill these positions with men at a salary from \$1,000 and \$1,200 per annum depending on previous training and experience, who shall relieve the Supervisor of all clerical work. They must be men of initiative and ability to enable them to meet the public in routine matters and attend to all clerical details in the office such as keeping records, including allotments, liabilities, disbursements, property, timber sales, grazing, uses, etc., and the preparation of all statistical reports, and preparing the replies of all ordinary routine mail. When he becomes familiar with the work and his character thoroughly known such a clerk should be bonded as a temporary disbursing agent when

such office is necessary, thus relieving the Supervisor from remaining in the office to pay bills when he ought to be on the Forest in direct charge of fire fighting and other urgent work. If the business of the Forest requires more than one clerk, additional clerks can be added upon the approval of the District office. These may be female when necessary at an entrance salary of \$900 per annum. In such cases the male clerk will be virtually chief clerk of the office.

There will be little occasion therefore in the future for Supervisors to be forced to remain at their headquarters because of routine detail, or devote valuable time to relatively unimportant matters. This is a long step ahead and I believe will do more than any other act to relieve the present top-heavy system of organization. It will permit of energy and effort being directed to where it is most needed – to the field. We can now breathe a sigh of relief and begin in earnest the study of the real problems of forestry on our National Forests.

I have tried to make clear only in a general way what those problems are so far as they may have a bearing on organizing our Forest force, and the necessity of immediately beginning activity for their solution.

It remains for other members of the District office to elaborate more fully and describe in detail what these specific problems are. It is sufficient to say, however, that they are all more or less technical, for forestry is an art based on scientific principles.

This brings me to the real issue covered by the subject, "The Organization of the Forest Force." My discussion so far has been confined to a study of past history in this and other countries, and in order that light may be thrown on the weakness of the present, with the hope that the proper remedy may be found. Knowing what the final purpose of the Service is, it remains for us to determine the most economical and effective means for accomplishing it. Men and money are the first requisite. The manner in which the men are organized to spend the money and do the work is the second. An organization of men might be considered as a machine for doing a certain kind of work of which the men can be compared to the various parts. The better the parts and the more skill used in their adjustment the easier and more economically the work can be performed. It is obvious if our business is going to be technical in nature it will be necessary to sooner or later build up a more or less technical organization, and right here I want to say that it is not absolutely essential that a man attend a Forest School and take up an extended course in Forestry to fit himself for future work in the Service. One man with the faculty of seeing things in long periods, that is, who can appreciate conditions as they will be 40, 60 and even a 100 years hence, has the essential viewpoint of the Forester. He can also by careful reading grasp the full meaning of the work he is engaged upon. In order to give such Rangers as care to take up the subject and fit themselves for a better grasp of the work in hand and prepare themselves for more responsible positions a course of reading has been selected and will be sent out. This course will not be compulsory, but it is believed that the greater majority of the men will be glad to avail themselves of this opportunity of betterment.

On most Forests the plan has been to train a man to do all kinds of work assigned to him regardless of whether it was clearing out a trail, marking timber, mapping, or transacting business with the public. It has always been felt that we should not make specialists of anybody but should instead develop men to perform any and all kinds of work which fell to them.

To better accomplish this end the Forests have been divided into Districts of varying sizes, depending upon the nature of the country and the amount and kind of business involved in each. The establishing of these districts has been left almost entirely to the judgment of the individual Supervisor and he has made many or few as he saw fit. A range is placed in charge of the district and is held responsible for all work within it. His expenses are not allowed while on duty within the prescribed territory and they are paid only when necessity demands that he be detailed temporarily to other districts or to Supervisors' headquarters. Even then circumstances may not warrant his reimbursement. For instance, if the expenses in the district to which he is temporarily detailed are no more than those to which he is subjected in the district in which he is permanently assigned, good administration may demand that he remain on the same basis. Again, if the expenses are greater then it may be best to only reimburse him for the excess. This is largely a matter of local administration to be adjusted in the best judgment of the Supervisor.

However, there seems to be no uniformity of opinion among Supervisors as to what is the best way of organizing their force on the district plan in order to insure maximum results. In fact, occasionally there is no definite arrangement at all. There have been instances where the plan of establishing districts has been followed because the instructions and the policy of the Service prescribe them, but they were not used as a basis for a close knit organization. A Ranger will be assigned to one district for a time but not be given opportunity to become thoroughly familiar with it nor all work pertaining to it. The Supervisor has rather followed the plan of giving each man special lines of work to do and then as soon as one Ranger runs up against work he can't do the Rangers are shifted from one district to another and their expenses allowed. To say that such a method of organization is expensive and inefficient needs no argument.

Another system or organization is found which apparently "works" but is not usually found on most Forests. In this case each member of the force from the newest Guard to the oldest Ranger is directly responsible to the Supervisor or the Deputy. As many districts are established as there are members of the force. When this is not possible two or more men are placed in the same district. As an example, there are ten districts and ten field men. Each district contains an average of 135,000 acres, the older men in point of service may advise or give assistance to a certain extent to the newer men, but the Supervisor or Deputy alone issue instructions and receive communications pertaining to the Service work from each man. The idea is that making each man directly responsible to the Supervisor insures better results because there is no "middle-man" in the shape of an unfair Ranger who might take advantage of men under him. On the other hand, new men are not looked after quite so well perhaps as if they were responsible to an older man in the field. The Supervisor gets around this to some

extent by having it thoroughly understood by all members of his force that slackness, inefficiency, carelessness, etc. are to be reported at once by any member who discovers it in another. On one Forest where this plan has been followed practically the entire force are superior men and above the average type of Ranger. All are yearlong men. This fact may have a large bearing on the efficiency of this form of organization.

On another Forest the Supervisor believes in having fewer districts even if the area of each is materially increased, provided thoroughly competent Rangers are put in charge. In this case he has divided his force into five districts of an average of 192,222 acres each. In each of these districts the most skilled man has been designated as District Ranger. They handle practically all of the correspondence with the office and are the authors of all the more important reports. They take personal charge of most of the work on the Forest during the greater part of the year. It has the advantage of giving every new man who enters the force the benefit of direct instructions by experienced men and also the advantage of keeping the work of those men who are least inclined to be industrious under close observation. It also relieves the office of considerable correspondence especially in view of the policy as directed in Service Order 28. The Supervisor argues that if the District Rangers are especially qualified and receive compensating salaries it will be less necessary to have very high salaried men to fill out the rest of the force. Since most of his District Ranger positions are very satisfactorily filled, future increases in the force can consist mostly of low salaried men employed for short terms during the summer season. The increase in the winter force may be made more gradually than in the case of the summer force. It is apparent that every increase in the allotment of the Forests will mean a proportionately greater extension of field work than has been the case in the past. A slight modification of this plan is strongly advocated by one Supervisor in this District. His idea is to divide his Forest into as few districts as possible, depending upon conditions. Each one, of course, would be far larger than is ordinarily the case. The man in charge of each district is to be a technically trained man either a Forest Assistant or else a well equipped Ranger who will be taught essential technical matters. He will be responsible for conducting all lines of work in his district, transact business with the public and have supervision of all reports to the Supervisor. He is to be given such assistance as is necessary in handling the business. His headquarters will be in some large town near the district in order to afford the easier transacting of public business. The manual labor involved in trail building, house-construction, etc. is to be performed by resident Rangers who will occupy the Ranger Stations within the Forest. They will report directly to the District Ranger. It will be noted that this plan is in some respects strikingly similar to the arrangement of the Forest force in Germany.

A sort of combination of the first two methods just outlined has been tried on one or two Forests in this District. There are several District Rangers who are held responsible for the work and men under them, but the Supervisor deals directly with all men regardless of their positions in the scale of employment and, furthermore, there are other men in the District who are not exactly in charge with whom he deals directly.

These in brief are the systems now in vogue or advocated by the Supervisors in this District. I can not say that I am heartily in favor of either one of them or a combination of any of them for adoption as the correct method on each Forest in the District. It seems to me that the organization of a Ranger force depends on too many factors to lay down any hard or fast schemes to be strictly adhered to at present.

There are two primary general factors to be considered in organization:

- a. The character and amount of business on the Forest.
- b. The efficiency and capabilities of the men who are to handle the business.

If the Forest business is mainly timber or grazing, or a combination, or miscellaneous, the kind of man needed is perfectly obvious and requires no argument or discussion. The rub comes in not knowing the kind of men we need but in always getting the kind we want. So far we have taken what we can get for the salaries we pay and try to do the best we can with them. We have a general standard of what a Ranger must be but a large per cent fall short of it. Therefore, it seems to me that the method of organization on a Forest at any given time other things being equal, depends almost entirely on the qualities of the Ranger material on hand. If the force contains a certain number of highly trained and efficient Rangers and the balance are very poorly equipped it may be best to divide the Forest into but a few districts and place them and the poorer Rangers under the charge of the better men. Or again, the force may be so divided in efficiency and owing to the topography of the country and nature of the business that some of the districts may be quite large and enable the Supervisor to follow the District Ranger plan on part of his Forest and some other arrangement on the other.

The Ranger District idea is, of course, sound but the Service is yet in more or less a formative period. And until our Rangers are improved and trained to meet the demands and requirements of practical forestry the district plan can not be put to its highest efficiency. To get the greatest use of the National Forests in the most feasible and practical way is to divide each Forest unit into as many smaller units as the business demands and the nature of the country permits, and place each district in charge of a competent man. I believe the idea of the large district under one Ranger with many lower priced and titled men under him is fundamentally wrong. We are making supervisory officers out of the District Rangers instead of administrative. And too much supervision has been one of the chronic criticisms of the enemies of the Forest Service. This fact was long ago recognized by the Germans and although the evil is not by any means eliminated today, they escape appearance of so much supervision by dividing their administrative units into very small areas. In fact, one of our Ranger districts might be compared to a Forest unit in Germany so far as size is concerned. This may follow in the United States to a certain extent as time goes on and the business and the intensity of management increases.

I believe we should adopt as soon as circumstances will permit as nearly a uniform organization as possible on all Forests. It is obvious, of course that it is impracticable at present because of the wide variation in the quality of the Ranger material on hand. Many of our present arrangements should be considered merely in the nature of a temporary makeshift until we can get better material to construct the organization we want. On each Forest I believe there is a fairly good nucleus from which to start a better and more effective organization. The increased entrance salary which is now possible and a more rigid examination will insure attracting and obtain a better class of men to the Service. Many of the colleges and universities throughout the country are training young men in forestry course, who will enter the Service as Rangers or Forest Assistants. I believe that as fast as they show their adaptability and fitness for the work they should be given more and more responsibility until in the end our organization will be thoroughly equipped to handle those larger forestry problems which are upon us now.

I believe the Forest Assistants who are attached to the different Forests should in a large measure be given more leeway in handling technical problems than heretofore. It has been the practice in the past to assign them to all kinds of administrative work, such as surveying Ranger Stations and June 11 claims, locating trails, and handling stock matters. I do not mean to say that he should not be given any of this kind of work to do. A little of it is essential but he should not be employed for indefinite periods on such work to the detriment of other work which is more properly his function. It oftentimes happens that a Supervisor will overlook important forestry problems on his Forest, either through lack of observation or press of routine detail, and by keeping the Forest Assistant on administrative matters he defeats his real usefulness and the purpose of his assignment. He should be allowed to work out and demonstrate his usefulness and efficiency in forestry. Nevertheless, I believe he should be considered as part of the field force and assigned to a district and not confine itself to a Ranger District but may include several such districts in which there are timber sales and other forestry business demanding his attention. He should not be allowed his expenses while on his district but should be placed on the same basis as any other field officer. If there is need for transferring him to other parts of the Forest then his traveling expenses could be paid the same as outlined for Rangers. If there is more work than can be performed by one assistant, two or more should be assigned to the Forest with respective districts, thus obviating any subsequent temporary transfers. As the men of the Forest become better equipped and a better system of close management is effected then we may be able to do away altogether with our present policy of having Deputy Supervisors. Each District Ranger will be in effect a Deputy or Assistant Supervisor, and with a competent male clerk to handle the office, the Supervisor will be enabled to spend much of his time in the field with the Rangers.

There is one objection to dividing a Forest into too many small districts with headquarters on the Forests or in small towns near it which I might mention for your consideration. With the policy for employing a higher class of men in the future, it may be difficult to obtain Rangers of the right sort who will be willing to isolate themselves and their families from practically all social intercourse, and where the schools and

church facilities are wanting. For this reason it will undoubtedly be necessary that Ranger Districts remain fairly large for many years to come, or until the country is better settled and more attention is given to the rural schools and churches in the regions in which the National Forests lie. Still a Forester's life and job in this country will always be more or less away from the centers of civilization and social influences. This fact will to a large extent react on the Forest Schools and tend to draw a class of men to their courses who will expect a life of a military character and hardship.

I have dwelt at some length on the organization of the force on a National Forest as a whole. There are some lines of work which require special organization in each district although still forming a part of a general plan for the entire Forest. The most important of them are the construction of permanent improvements and fire protection. Both of these subjects will be covered by members present so I will not enter into any detailed discussion of them in this paper.

I have attempted to make clear in this necessarily short paper two vitally important things which I urge that each member present take home with him. The first is that American Forestry has reached a crisis. We can no longer delay an intelligent and earnest effort to coordinate the different lines of business on our National Forests into one general plan, so that each takes its proper place in relation to the other. We must ever keep in mind that the central purpose in forestry of which all other lines of business peculiar to our Forests are merely subsidiary, is the conservation of our natural resources whether wood, water or mineral wealth. Primarily it is wood that we are mostly interested in in the broader scope of conservation. We are chiefly concerned in maintaining a perpetual supply of it. This can be accomplished only in one way – that of applied scientific Forestry methods. I have shown the necessity of an immediate beginning in their application by calling attention to the nearness of the fact approaching time when our Forests will be nothing but a memory. We do not need to wait for favorable taxation and fire laws to be enacted by an awakening public opinion to make it possible. These are serious obstacles to the State and individual in adopting practical Forestry methods, but not to us. We argue and try to persuade lumbermen and legislators that Forestry is practical and not theoretical. Have we a single example on our National Forests in this District or on any other for that matter, of a practical working plan based on sustained annual yield and a yearly cutting budget to prove it to them? It is time to get busy and show by example as well as by argument that Forestry is safe and practical. Demonstrate this by concrete examples to the practical business man and the question of taxation and fire law will be solved. When this is done the success of American Forestry is assured.

The second point I want to impress upon you is the necessity of an increased training and efficiency in our personnel. Forestry is not agriculture, nor grazing, nor the custody of land, nor a Federal Bureau to conduct routine business. It is a branch of engineering based on practical scientific methods just the same as Civil, Mining or Electrical Engineering. It is just as much of an engineering problem to produce the greatest amount of wood on a given area of land in the shortest possible time and with least expenditure of money, at the same time removing it without destroying the chances of a

continuous future supply as it is to harness a waterfall with the same results to be obtained.

In developing power from the waterfall a special kind of engineer is needed, so with building a railroad, or digging a mine. You would not expect a man doing any of these engineering feats unless he had been properly trained to do his respective kind of work. Therefore, can we expect a man not properly trained in Forestry to handle Forest Engineering? Obviously no. It is then apparent that unless our present practice of only employing men who know nothing about the subject be changed we will never be able even to make a beginning in practical forestry on the National Forests. But before I go further let me explain a certain point lest some one anticipate that I am going to make a rash statement that only technical trained Foresters are going to be given control of the administration of our National Forests and that those Supervisors and Deputies now in office who are not trained Foresters are going to be asked to step down and be replaced by them. Such an impression would be very unfortunate and far from the truth. A man who handles a National Forest is at the head of an intricate and ramifying business which involves many different kinds of work. Practical Forestry, of course, is paramount but there are many other things that must be done also. He can be compared to the man in private life who is the proprietor or owner of a manufacturing establishment. As is often the case the owner knows very little about the technical professions represented by the various kinds of engineers who are employed to manufacture or perfect his product. But he possesses something else which is essential to the success of the enterprise and makes it possible. He must be an organizer of sound business ability and judgment or his enterprise is a failure in spite of ably trained assistants and subordinates. In other words, he is concerned only about certain results and to attain them he surrounds himself with trained men in certain lines who are able to supply what he demands.

On the other hand, the technological trained man in the employ of the manufacturer although exceptionally able and very efficient in his respective line might be entirely unable to succeed as the business head of the concern. His lack of business and administrative ability would cause a speedy failure.

So it is with a Supervisor or Deputy. Either one need not necessarily be a technically trained Forester but if not, it is imperative that they furnish the necessary administrative ability and business acumen to enable them to understand what is required and produce the results demanded.

The responsibility rests, therefore, upon each Supervisor to see that the men he employs are equipped to produce the results we require. Get the proper material into your field forces and the organization of them into an effective machine will be a simple matter. Encourage the better ones now on hand to spend their spare time in study at Ranger Schools or by individual application with books on the subject. Remember that the Ranger force is the backbone of the Forest Service. Upon it depends whether we succeed or fail. When we have a complete force of able men then we can perfect the District plan to its greatest efficiency, although it must not be understood that a District

is an end in itself but rather a means to an end. The District and eventually the Forest unit must coincide with the area embraced in the working plan. A felling budget for each one will be determined and the Ranger in charge will be responsible for its maintenance. The other work and business connected with his District which will of necessity become smaller and smaller as conditions change will be performed by Guards or Assistant Rangers. But I believe that the highest efficiency all should be responsible directly to the Supervisor except perhaps in very narrow limits.

Perhaps I have dwelt too long on this subject and emphasized too strongly the need for reform, but I think not. I sincerely believe it is time we check our present course in developing an organization with no thought or purpose except to merely handle clerical or special lines of work. It is time to stop and take stock of our men and methods as well as our trees. I hope this thought sinks home and that light will be admitted to our future course as well as to our Forests.